CLAIMS:

1. A method comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy, and

transferring the substantially powdered hydrogen-absorbing alloy from the activation vessel to a hydrogen storage tank without substantially exposing the powered hydrogen-absorbing alloy to oxygen.

2. A method according to claim 1, wherein the hydrogen-absorbing alloy is ingot-shaped and the substantially powdered hydrogen-absorbing alloy is produced by continuously breaking the ingot-shaped hydrogen-absorbing alloy within the activation vessel due to volume expansion caused by the hydrogen-absorbing alloy absorbing hydrogen.

3. A method according to claim 1, further comprising cooling the hydrogen-absorbing alloy within the activation vessel and then introducing high-pressure hydrogen to the cooled hydrogen-absorbing alloy.

4. A method according to claim 1, wherein relatively high-pressure and low temperature hydrogen gas is introduced into the activation vessel.

5. A method according to claim 1, wherein the substantially powdered hydrogen-absorbing alloy is transferred from the activation vessel to the hydrogen storage tank by connecting the activation vessel to the hydrogen storage tank via a valve.

6. A method according to claim 5, wherein the valve comprises a ball valve disposed on the activation vessel.

7. A method according to claim 6, further comprising transferring the ball valve from the activation vessel to the hydrogen storage tank when the powdered hydrogen-absorbing alloy is transferred to the hydrogen storage tank from the activation vessel.

8. The method according to claim 1, further comprising affixing a flat lid to the top of the hydrogen storage tank, thereby defining a ceiling portion of the hydrogen storage tank, after the powdered hydrogen-absorbing alloy has been transferred to the hydrogen storage tank.

9. A method according to claim 8, further comprising continuously supplying an inert gas to the hydrogen storage tank when the flat lid is being affixed to the hydrogen storage tank.

10. A hydrogen storage tank manufactured according to the method of claim 1.

11. A method according to claim 1, further comprising storing hydrogen as absorbed hydrogen within the powdered hydrogen-absorbing alloy disposed within the hydrogen storage tank.

12. A method according to claim 1, wherein the hydrogen absorbing alloy comprises titanium and vanadium and has a body centered cubic (BCC) structure.

13. A method according to claim 12, wherein the hydrogen gas contacts the hydrogen absorbing alloy at a pressure of about 0.5-10 MPa and a temperature of between about 20-60°C.

14. A method according to claim 13, further comprising:

cooling the hydrogen-absorbing alloy within the activation vessel and then introducing relatively high-pressure and low temperature hydrogen to the cooled hydrogen-absorbing alloy, wherein the hydrogen-absorbing alloy is ingot-shaped and the substantially powdered hydrogen-absorbing alloy is produced by continuously breaking the ingot-shaped hydrogen-absorbing alloy within the activation vessel due to volume

expansion caused by the hydrogen-absorbing alloy absorbing hydrogen, and wherein the substantially powdered hydrogen-absorbing alloy is transferred from the activation vessel to the hydrogen storage tank by connecting the activation vessel to the hydrogen storage tank via a ball valve disposed on the activation vessel.

15. A method according to claim 14, further comprising transferring the ball valve from the activation vessel to the hydrogen storage tank when the powdered hydrogen-absorbing alloy is transferred to the hydrogen storage tank from the activation vessel.

16. A method according to claim 14, further comprising evacuating the hydrogen-storage tank before transferring the powered hydrogen-absorbing alloy into the hydrogen-storage tank.

17. A method according to claim 14, further comprising filling the hydrogen-storage tank with an inert gas before transferring the powered hydrogen-absorbing alloy into the hydrogen-storage tank.

18. A hydrogen storage tank manufactured according to the method of claim 14.

19. A method comprising storing hydrogen as absorbed hydrogen within powdered hydrogen-absorbing alloy disposed within the hydrogen storage tank of claim 18.

20. A method of manufacturing a hydrogen storage tank with a powdered hydrogen-absorbing alloy that has absorbed hydrogen, the method comprising:

preparing an activation vessel filled with a hydrogen-absorbing alloy,

activating the hydrogen-absorbing alloy by introducing hydrogen gas into the activation vessel,

generating a substantially powdered hydrogen-absorbing alloy that has been activated within the activation vessel by means of the hydrogen gas,

connecting the hydrogen storage tank to the activation vessel and

supplying the activated hydrogen-absorbing alloy to the hydrogen storage tank from the activation vessel.